

Amendments to the Specification:

Please amend the specification as follows:

Please amend the title of the application as follows:

Stent Range Transducers and Methods of Use

Please amend paragraphs 1 and 2 of page 1 to read as follows:

This application claims the benefit of U.S. Patent Application Serial No. 09/669,060, filed September 22, 2000, and U.S. Provisional Application No. 60/155,611 filed on September 23, 1999, the complete disclosure disclosures of which are incorporated herein by reference.

CROSS-REFERENCES TO RELATED APPLICATIONS

This application is ~~being filed concurrently with related~~ related to U.S. Patent Application Serial No. 09/668,687 (Attorney Docket Number 019601.000410), entitled “Differentially Expanding Stent and Methods of Use”; and U.S. Patent Application Serial No. 09/668,832, (Attorney Docket Number 019601.000430) entitled, “Bifurcation Stent Systems and Methods,” the complete disclosures of which are incorporated herein by reference ~~and filed at a date even herewith.~~

Please amend paragraph 8 on page 3 to read as follows:

Figs. 3A, ~~and 3B and 3C~~ and 3C provide side and front cross-sectional views, ~~respectively, of the apparatus shown in Fig. 2~~ of embodiments of the apparatus shown in Fig. 2;

Please amend paragraph 8 on page 4 and continuing to page 5 to read as follows:

Fig. 1 depicts a simplified view showing a stent 10 disposed within a main vessel 14. Main vessel 14 may comprise an artery, a vein or a wide range of body lumens into which it is desirable to dispose stent 10. Stent 10 includes a side hole 12, which is in registry with an ostium of a branch vessel 16. The stent wall is comprised of struts and connectors forming multiple passageways. In many cases, it is desirable to have side hole 12 aligned with the ostium of branch vessel 16 to, for example, permit the introduction of a branch stent or second stent (not shown) into branch vessel 16. The alignment of side hole 12 with branch vessel 16 is often crucial to the proper use of stent 10, and prior art methods for alignment are replete with problems. Apparatus, systems and methods of the present invention are directed, in part, to properly aligning side hole 12 with branch vessel 16 by using an image transducer or catheter with stent 10.

Please amend paragraph 9 beginning on page 4 and continuing on page 5 to read as follows:

Turning now to Figs. 2, 3A, 3B, 3C, 4A and 4B, an exemplary stent delivery system 15 according to the present invention will be described. Stent 10 is shown in a non-expanded state, crimped around a balloon 20. Balloon 20 provides a mechanism for providing stent 10 when stent 10 is placed at a desired location within a body lumen. It will be appreciated by those skilled in the art that other methods of expanding stent 10 fall within the scope of the invention. System 15 further includes a transducer 22 to provide an imaging capability to help properly position side hole 12. Transducer 22 typically comprises piezoelectric materials for the conversion of electrical signals into mechanical energy, more specifically, sound energy. As best shown in Fig. 3A, transducer 22 is coupled to a housing 24. In one embodiment, housing 24 is disposed within balloon 20, as shown in Fig. 3A. Transducer housing 24 is positioned so that ultrasound signals transmitted from transducer 22 pass through side hole 12 into the surrounding fluid or tissue. In this manner, and as further described below, transducer 22 may be used to indicate when side hole 12 is properly aligned with a branch vessel 16 as opposed to facing a wall of main vessel 14. In an alternative embodiment ~~not shown~~, as shown in Fig. 3C, transducer 22 is mounted on an outer surface of a balloon 25 or positioned between balloon 25 and stent 10. For example, transducer 22 may

be mounted on balloon 25 within sidehole 12. In one embodiment, a guidewire 18 is disposed through balloon 20, and is used to help guide the stent delivery system to a desired region within a body lumen.

Please amend paragraph 3 on page 5 to read as follows:

Turning now to Fig. 3B, a cross-sectional view taken along line 3B-3B is shown. Stent 10 comprises a plurality of struts 26 configured in a desired relationship. It will be appreciated by those skilled in the art that the precise configuration of stent struts 26 may vary widely within the scope of the present invention. Further, the present invention may use stent configurations disclosed in U. S. Application Serial No. _____
09/668,687 (Attorney Docket No. 19601-000410), and U. S. Application Serial No. _____
09/668,832 (Attorney Docket No. 19601-000430), the complete disclosures of which have been previously incorporated by reference. Stent 10, including struts 26, are crimped around balloon 20. The imaging catheter, which includes transducer 22, is disposed within a balloon lumen 30 inside balloon 25. The imaging apparatus has an outer member 32 and an inner member 34 defining a wire lumen 38 therebetween. A passageway 40 is formed within inner member 34. Wire lumen 38 is used to maintain transducer wires 36, which typically connect opposing faces of transducer 22 with a controller (not shown). Passageway 40, in one embodiment, defines a guidewire lumen 40 through which guidewire 18 extends. In this manner, guidewire 18 extends through housing 24 to facilitate proper alignment between transducer 22 and stent 10.

Please amend paragraph 1 of page 9 to read as follows:

~~according to the present invention are described in further detail in U.S. Application No. _____ (Attorney Docket No. 19601-000320), entitled "Catheter With Side Sheath And Methods," and U.S. Application Serial No. _____ (Attorney Docket No. 19601-000120), entitled "Extendible Stent Apparatus", the complete disclosures of which are incorporated herein by reference.~~

according to the present invention are described in further detail in U.S. Application Serial No. 09/663,111, entitled “Catheter with Side Sheath And Methods”, and U.S. Application Serial No. 09/600,348 entitled “Extendible Stent Apparatus,” the complete disclosures of which are incorporated herein by reference.